

CA30NH2090
A56
1977

1977

DEPARTMENT OF ENGINEERING

ANNUAL REPORT



W. A. WHETEN
B.SC., F.E.I.C., P. ENG.
COMMISSIONER OF ENGINEERING

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

DEPARTMENT OF ENGINEERING
71 MAIN STREET WEST, HAMILTON, ONTARIO 526-4170
L2N 3T4

W. A. WHETEN
B.Sc. F.E.I.C. P.ENG.
COMMISSIONER OF ENGINEERING

FEB 3 1981
GOVERNMENT DOCUMENTS
HAMILTON PUBLIC LIBRARY
55 YORK STREET
HAMILTON

REFER TO FILE NO.
ATTENTION OF
YOUR FILE NO.

Mr. Chairman and Members
Engineering Services Committee

Re: Annual Report of the Department of Engineering for 1977

Members of the Committee:

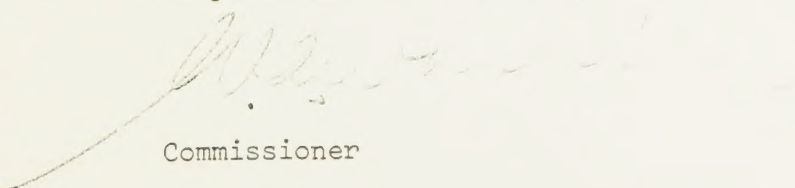
It is my pleasure to submit herewith a report of the activities of the Department of Engineering for the year 1977.

This report has been divided into sections in accordance with our Organizational Chart and each section has been developed by the individual section Director. While the report is intended to give a general idea of the scope of the work undertaken by the Department in 1977, I would hasten to emphasize the generality of the report. The various sections of the report, generally speaking, do not go into specifics and we welcome the opportunity of discussing any phase of our operation in more detail if so requested.

During the past year a number of pictures have been taken of various projects relating to the Department of Engineering. Some of these pictures are included in our report for the past year in an attempt to illustrate the type of works carried out by our Department. It is our intention that in future years a greater number of pictures would be available to give the members of the Committee a better understanding of the type of works undertaken by our Department.

I trust you will find this report concise, informative and that it will give you a clear picture of progress made during 1977 and it also serves to provide some insight into the operations of the Department of Engineering for the Regional Municipality of Hamilton-Wentworth.

Respectfully Submitted,


Commissioner



Digitized by the Internet Archive
in 2024 with funding from
Hamilton Public Library

<https://archive.org/details/departmnetofengi00unse>

CONTENTS

	<u>PAGE</u>
GENERAL INFORMATION	3
ORGANIZATIONAL CHART	4
ENVIRONMENTAL SERVICES SECTION	5
TRANSPORTATION SERVICES SECTION	18
REGIONAL LABORATORIES	29
ENGINEERING SERVICES SECTION	33
SURVEYING SECTION	41
ADMINISTRATIVE SECTION	47

DEPARTMENT OF ENGINEERING

1977 REPORT

Regional Municipality of Hamilton-Wentworth under the direction of W. A. Wheten, Commissioner of Engineering is comprised of the following sections:

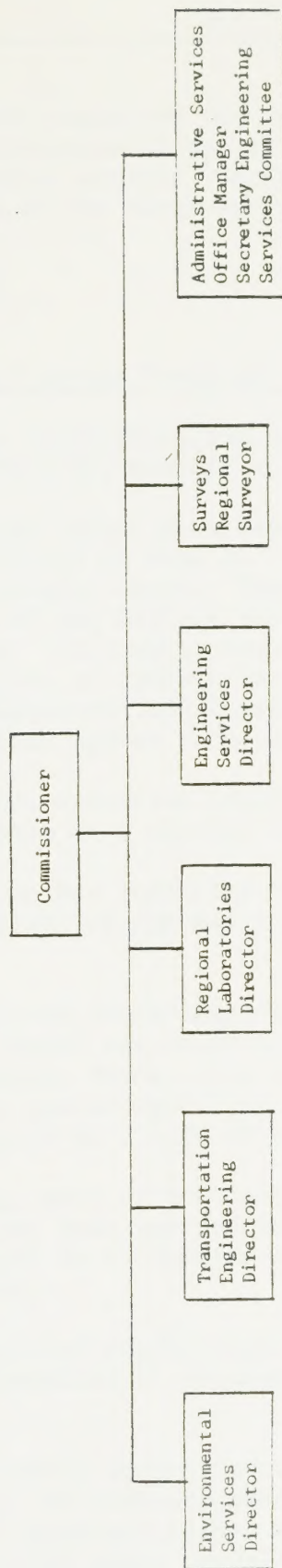
ENVIRONMENTAL SERVICES SECTION
TRANSPORTATION SECTION
REGIONAL LABORATORIES
ENGINEERING SERVICES SECTION
SURVEYING SECTION
ADMINISTRATIVE SECTION

These sections are responsible for the following services:

1. Planning, Design, Construction and Maintenance of all sewage works facilities, sanitary sewer system throughout the Region including storm sewers in the City of Hamilton.
2. Planning, Design, Construction and Maintenance of the Regional Road System.
3. Material and Liquid Testing in the Regional Laboratories.
4. Planning, Design, Construction and Maintenance of all water works facilities, and watermains.
5. Surveying.
6. Solid Waste Disposal including S.W.A.R.U.

A summary of these services carried out in 1977 is listed on the following pages.

DEPARTMENT-ENGINEERING



ENVIRONMENTAL SERVICES

J. R. G. LEACH, DIRECTOR

This Section has a staff of 366 employees and is responsible for the planning, operations, and maintenance of sewers, watermains, sewage plants, water plants, subdivision control, Technical Services, Solid Waste Sites, and SWARU. Some of the works carried out in 1977 include the following:

SEWAGE WORKS

1) Woodward Avenue (Hamilton) Sewage Treatment Plant

A number of problems were experienced during the year, particularly with the sludge incinerators and associated equipment.

The burner refractory tiles, which were replaced by the incinerator supplier in 1976, again failed in June 1977 necessitating shutdown of the incinerators for several weeks. Examination of the damage indicated that the cause of the failure was poor design and faulty installation of the tiles. Following consultation with the suppliers and with operators of similar incinerators, new tiles of a modified design were fabricated and installed by Regional maintenance personnel; these appear to be completely satisfactory.

During the shutdown period, extensive repairs and modifications to the incinerator stack system were carried out.

A temporary sludge conveyor was installed to enable filtering to continue during the shutdown; sludge was trucked to the Brampton Street Landfill Site.

The ash slurry line, repaired temporarily in 1976, again failed in March 1977. A settling lagoon was constructed, using lumber and sandbags, on one of the plant roads; this allowed incineration to continue whilst work on a replacement line proceeded. The new ash line was completed in August at a cost of approximately \$92,000.

Incinerator stack testing, part of the original secondary treatment plant contract, has not yet been carried out; a decision by the Ministry of the Environment as to whether this testing can now be abandoned is still awaited.

Replacement of the underground piping supplying steam to the water purification plant was commenced in October 1977. Cost of this work is \$135,000.

Motorized operators and remote control systems have been installed on four overflow gates in the combined sewer system. These can now be operated from the treatment plant, thus eliminating the cost of labour to operate the gates manually and reducing the extent of sewage overflow to the bay.

ENVIRONMENTAL SERVICES ... Cont'd

1) Cont'd

A considerable amount of time was spent during the year in assembling information required by lawyers acting on behalf of the Region in the matter of the bankruptcy of the general contractor for the secondary treatment plant extension. This litigation is likely to continue for a considerable time.

The contract for the first phase of the plant expansion (an additional raw sewage pump, new aeration tanks and new secondary clarifiers) has been awarded; construction is to start in January 1978.

Average daily flow for 1977 was 56.1 mgd., or 1.5 mgd. higher than that for 1976. Effluent quality showed a significant improvement over previous years, but is not yet quite within Ministry of the Environment objectives. Part of the reason for this, is an apparent rapid fluctuation in certain characteristics of the raw sewage received at the plant from time to time; this is thought to be the result of intermittent and illegal discharges by one or more industries in the City. This matter is currently being investigated by the Industrial Wastes Section.

Total operating and maintenance costs were \$2.88 million, corresponding to a unit cost of 14 cents per thousand gallons treated.

2) King Street (Dundas) Sewage Treatment Plant

The plant continued to operate as well as could be expected under the circumstances of overloading and excessively high storm flows.

Construction of the plant expansion and dredging of the Desjardins canal were commenced in August.

A total of 637 million gallons of sewage was processed during the year. Total operating and maintenance costs were \$188,000. corresponding to a unit cost of 30 cents per thousand gallons.

3) Main Street (Waterdown) Sewage Treatment Plant

Several equipment failures in the summer resulted in substandard effluent quality for certain periods and in numerous odour complaints by local residents.

Design of the Plant expansion was completed in the fall of 1977. Contracts have been awarded and construction is scheduled to commence in January 1978.

Approximately 60 million gallons of sewage was treated at a total operating and maintenance cost of \$63,000. This corresponds to a unit cost of \$1.05 per thousand gallons.

ENVIRONMENTAL SERVICES ... Cont'd4) Ancaster Sewer System

The main pumping station on Old Ancaster Road was accepted for operation and maintenance from the Ministry of the Environment on 8 July 1977.

A problem unique to this station is a consequence of the fact that no emergency overflow has been provided; in the event of station failure, therefore, flooding of basements in the area will occur. Discussions with the Ministry on this and certain other problem areas in the Ancaster sewer system are currently in progress.

At the end of 1977, flow from the system was approximately 0.5 mgd.

5) Industrial Wastes Control

Monitoring of industrial wastes discharged to the sewer system continued throughout the year.

A great deal of time was spent in attempting to locate the sources of certain wastes which are thought to be adversely affecting the biological treatment process at the Woodward Avenue Plant. It is suspected that the recent shutdown of a commercial liquid industrial waste disposal facility has resulted in wastes previously treated at this facility being illegally discharged to the sewer system.

Amendments to the Sewer By-Law were finalized and have been approved by Council. Negotiations with the industries affected by the changes are in progress.

Assistance was provided to a number of organizations and individuals in dealing with illegal discharges, accidental spills, special studies, and similar matters.

WATER WORKS1) Purification Plant

The plant operated satisfactorily throughout the year, with no major problems occurring.

Average daily pumpage for 1977 was 70.1 mgd., or 2.3 mgd. higher than that for 1976. Although this is due in part to record high consumption during February, when many consumers ran their water services continually to avoid freezing, it appears that the trend towards decreasing consumption noted over the previous three years has now reversed.

ENVIRONMENTAL SERVICES ... Cont'd

1) Cont'd

A routine underwater inspection of the end crib on the 96 inch main waterworks intake revealed that one of the eight fiberglass crib screens had been completely destroyed by an unknown object. Later inspections indicated that damage to the concrete crib structure itself was minimal. A replacement screen is on order and will be installed when weather conditions permit. It is also intended to have the location of the intake officially marked on navigational charts.

Some difficulty was experienced in pumping sufficient quantities of water during approximately three weeks of the coldest winter weather, due to severe icing of the intake combined with abnormally high consumption.

Total operating and maintenance costs were \$1.52 million, corresponding to a unit cost of 6 cents per thousand gallons of treated water.

2) Booster Pumping Stations

Existing booster pumping stations operated satisfactorily during the year. Construction of Stations H5A (Greenhill Avenue) and H8A (DeWitt Road) was commenced. Station 4C (Hildegard Drive) was abandoned and the pressure district formerly served by this station incorporated into the H4B district.

The package pumping station removed from its previous Quigley Road location was repaired and reconditioned; it is to be relocated on Main Street West in the near future.

Approximately \$10,000 damage was done to the front wall of Station H5 (St. Joseph's Drive) as a result of a vehicle accident; no damage to equipment occurred.

3) Reservoirs

Reservoir H2A (Highway 403) and F1 (Kelly Street, Waterdown) were completed and placed into operation in the fall of 1977.

Total reservoir capacity at the present time is 163 million gallons.

TECHNICAL SERVICES SECTIONActivities1) Quality Control and Engineering Investigations

- i) Revision and administration of the Regional contract for construction quality control and inspections to supplement testing performed by Technical Services staff. Expenses associated with testing services totalled \$110,000., with \$32,000. worth of this amount of work being directed to the Regional Laboratories.

Total value of projects inspected was in the order of \$22,000,000. and included sewers, watermains, concrete, soils, asphalt and structural testing for both Regional and City of Hamilton activities.

- ii) A special investigation was carried out and a report prepared to evaluate the suitability of fly ash concrete, a relatively new material, for possible use in the 1978 concrete works program.
- iii) A part-time program has been implemented to revise and update material standards in "Specification Book A".
- iv) Administration of video sewer inspections for existing systems and new construction in the Region, including subdivisions; total value of these investigations in 1977 amounted to \$45,000.
- v) Testing and evaluation of materials and equipment used in Regional contracts and which were called for in the Regional annual supply tenders. Included were watermain and sewer pipes and hardware, cast iron products, chemicals, asphalt products, concrete, and aggregates; various other materials and equipment were examined upon special request. Although most quality control investigations were performed on a regular basis, certain equipment and materials, such as valves and petroleum products were only tested if problems were encountered in their use. In such instances our recommendations were submitted with a proposed course of remedial action. Approximately \$4,200. expended.
- vi) Administration of a continuing soil investigation program and compilation of records for use by all Regional Departments. This work, values at \$27,000. for 1977 was performed upon request from those sections requiring information.

ENVIRONMENTAL SERVICES ... Cont'd

- 1) vii) Watermain leak detection services were administered by this Branch to find and remedy problem areas in the Region causing substantial water losses; at a cost of \$5,000.

- 2) Annual Supply Contracts

The preparation of specifications and special provisions for 1978 annual supply tenders for all Regional Departments and various City of Hamilton Departments was performed in 1977. This work included requests for suggestions and new ideas from bidders, and the evaluation and incorporation of valid revisions into the tenders to keep specifications up to date. Distributable value of all contracts is approximately \$3,000.

- 3) Metrication and Educational Planning

Regular meetings were held with representatives from the Metric Committees of the Area Municipalities for which we compiled and disseminated metric information and publications. Various local educational institutions were contacted in an effort to establish a metric conversion course suitable for all staff in the Engineering Department.

The Metric News, the Regional Newsletter, was prepared by Technical Services and published monthly, with a present circulation of 250.

Data preparation and all necessary registration and related arrangements for metric education courses, Ministry of Transportation and Communications courses, Ministry of the Environment courses, and all seminars and conferences pertinent to the Department of Engineering were handled from this Section. Orders were placed for the bulk of the technical books, publications and other educational materials requested by Engineering Sections.

The above activities were budgeted at \$15,000.

- 4) Solid Waste Management

- A) Landfill Sites

- i) Administration of seven active landfill sites with an annual budget of \$876,000. During 1977, 400,000 tons of waste were received with anticipated total revenues of \$700,000. A detailed annual report of operations will be available by 31 January 1978.

ENVIRONMENTAL SERVICES ... Cont'd

- 4) A) ii) A major expansion of 8.3 acres at the Ancaster Landfill Site at a cost of \$106,000. is expected to extend the overall useful site life by two to three years. A new equipment storage and maintenance building is to be erected at the end of the year at a cost of \$25,000.

A new leachate handling system was installed around the completed portion of the site to reduce present and future environmental impacts of the landfilled refuse.

- iii) The Regional Landfill Site on Edgewood Road in the Township of Flamborough was filled to capacity at the end of October and was closed to the public, with local refuse being re-directed to the Regional Landfill Site in the former Township of Beverly.

- iv) The Stoney Creek and Binbrook Landfill Sites will reach capacity by the end of 1977 and are to be closed to the public at that time.

- v) The Hamilton east end landfill site was graded in preparation for the disposal of 24,000 cubic yards of sewage sludge from the adjacent sewage treatment plant expansion. In this process, sanctioned by the Ministry of the Environment, a method for the stabilization of digested sewage sludge by combination with selected foundry sand wastes was established. The above services, valued at approximately \$60,000. were provided by Dofasco, who supplied the foundry sand, at no cost to the Region.

- vi) The new experimental facility for the solidification of industrial liquid inorganic wastes, operated by K-D Enterprises officially went into operation at the Upper Ottawa Street Site in 1977. This process treated approximately 2,000,000 gallons of inorganic liquid waste entering the site, in 1977. Projected total annual gallonage for 1978 is in the order of 5,000,000 gallons for this treatment plant.

In addition, liquid organic wastes have been received and disposed on the landfill site at Upper Ottawa in the total amount of 5,000,800 gallons projected to the end of 1977.

- vii) In September of 1976, the Region called for tenders for construction and operation of a solid waste management system. Five bids were received. In July 1977, an evaluation report by the Steering Committee was issued for the 5 bids received. In August, a Final Report was made by the Steering Committee to Regional Council recommending the firm of Tricil Ltd.

4) A) vii) Cont'd...

Their Full Service Contract tender involves:

- a) S.W.A.R.U. operation, management and improvements.
- b) Construction of 3 transfer stations at Kenora Avenue, Upper Ottawa Street and Dundas.
- c) Operation of the transfer system.
- d) Operation of the Glanbrook Landfill Site.

The total annual cost for period I (commencing 1 January 1979) in the Tricil bid was \$7,923,323. The initial contract was for a 5 year period, with an option for the Region to renew for an additional 5 years with the incorporation of resource recovery systems if technology is available and markets are economical. Estimated 10 year contract total cost is in the order of \$80,000,000.

The memorandum of agreement between Tricil Ltd. and the Region was ratified by Regional Council on 4 October 1977. The year 1978 will be a transitional year for Tricil. This firm will assume the operation of S.W.A.R.U. as of 1 February 1978 and design work is commencing on the transfer stations.

Three parcels of property valued in the total amount of \$1,500,000. are required for the proposed Glanbrook Site. Negotiations have been successfully carried out with two property owners. It appears that expropriation measures will be required in order to acquire the third parcel.

Collection of data and preparation of reports for the proposed 10 Year Solid Waste Management System included tonnage studies, evaluation of waste characteristics, potential transfer station site investigations and access route alternatives.

- viii) Evaluation and report preparation defining potential sites in the Region for the disposal of "inert" solid waste, with a description of such materials and quantities that may be accommodated; this report will be submitted to the Ministry of the Environment upon its completion and acceptance by Council in 1978.

B) S.W.A.R.U.

Quantity of refuse processed at S.W.A.R.U. in 1977 is approximately 50,000 tons, with a total budget of \$2,800,000. Revenue for recovered metals amounts to \$43,000.

ENVIRONMENTAL SERVICES ... Cont'd

4) B) Cont'd...

The balance of the Ministry's 1976 grant of \$300,000. was spent on plant repairs and modifications to improve the plant's processing ability and reduce the environmental impact resulting from operations.

A major fire in June forced a two month shut down while we proceeded with reconstruction and investigation of the cause of the fire.

A fire protection proposal was developed and a report describing the \$200,000. system submitted to the Engineering Services Committee for approval.

Leaking steam condensers were overhauled at a contract cost of \$223,000.; a precipitator overhaul was performed at a cost of \$40,000. to improve emissions.

Routine Maintenance programs were initiated in an effort to minimize plant downtime as a result of mechanical malfunctions.

MAJOR SEWER MAINTENANCE WORKS COMPLETED

Item	<u>S A N I T A R Y S Y S T E M</u>			<u>COMBINED SYSTEM</u>		<u>STORM SYSTEM</u>
	<u>District</u> 1 Stoney Creek	<u>District</u> 2, 3 & 4 Hamilton	<u>District</u> 5, Dundas Ancaster & Flamborough	<u>Total All</u> <u>Districts</u>	<u>District</u> 2, 3 & 4 Hamilton	<u>District</u> 2, 3 & 4 Hamilton
Manholes - Inspected	2,990	2,217	11,366	16,573	6,319	3,156
Manholes - Cleaned	714	71	199	984	519	181
Manholes - Repaired	14	14	3	31	90	25
Complaint Investigation	65	966	131	1,311	0	0
Sewer Repairs	20	20	0	40	0	20
Overflows & Regulators Serviced	19	192	0	211	0	0
Sewer Inspection	583,889'	392,225'	990,316'	1,966,430'	1,418,238'	561,415'
Sewer Cleaning	1,000'	1,300'	400'	2,700'	29,217'	4,066'
Sewer Flushing	29,231'	316,932'	80,784'	426,947'	1,029,916'	1,570'

WATER WORKS MAINTENANCEMAJOR WORK DURING 1977

FUNCTION	AREA 1 HAMILTON	AREA 2 DUNDAS ANCASTER & FLAMBOROUGH	AREA 3 STONE CREEK	TOTAL
Watermain breaks repaired	236	31	74	292
Watermain leaks repaired	18	11	1	30
Service leaks repaired	348	41	14	403
Service barrels repaired	719	78	92	869
Service abandoned.	48	13	1	62
Service Thawed ?	~~390~~	~~8~~	~~12~~	~~410~~ 841
New Services installed	1240	124	331	1695
Hydrants repaired in field	126	8	38	172
Hydrants relocated & raised	34	6	5	45
Hydrants thawed ?	390 ✓	8 ✓	12 ✓	410 ✓
Hydrants inspected	18,115	1107	976	20,198
New valves installed	3	4	2	9
Valves replaced	---	2	2	4
Valves worked	2977	23	110	3110
Valves repaired	43	1	13	57
Hydrants painted	1366	-	1020	2386
Chambers rebuilt	6	14	---	20
Services replaced	181	8	0	189
Investigated poor pressure	---	---	-	388

WATER WORKS MAINTENANCEMAJOR WORK DURING 1977Miscellaneous Construction

- Relocate 6" watermain at Main and Wellington for Bell Telephone.
- Relocate 6" watermain at Main and Queen for Bell Telephone.
- Constructed 800' of 6" watermain at Churchill Street, Waterdown.
- Constructed 200' of 6" watermain at Taylor Road, Ancaster
- Cleaned east half of #1 Reservoir
- Changes boundaries for Grimsby supply.
- Swabbed and flushed at times numerous watermains on Highway #8, Winona, Barton and Fifty Road due to dirty water since change-over from Grimsby supply.
- Cleaned two reservoirs, Ancaster.
- Cleaned reservoir - Highway #99, Dundas.
- Changed two pressure reducing valves, Ancaster.

WATER METERS

Meters Purchased	-	All Sizes	1507
Meters Installed	-	All Sizes	1902
Meters Removed	-	All Sizes	298
Meters Changed	-	All Sizes	2629
Meters Shop Repaired	-	All Sizes	2391
On Site Repaired	-	All Sizes	234
Field Tested	-	All Sizes	8

This Section has a staff of 61 employees and is responsible for administering, planning, operations, maintenance, and snow removal on Regional Roads within the City of Hamilton traffic operations and maintenance as contracted with the City of Hamilton.

MAJOR IMPROVEMENT WORKS

- 1) In Stoney Creek, the realignment and reconstruction of the Vinemount (T.H.&B) Bridge on Ridge Road was completed.

Total Estimated Cost \$800,000
- 2) In Hamilton, the reconstruction of King Street from Bay Street to Dundurn Street was initiated.

Total Estimated Cost \$758,000
- 3) In Hamilton and Stoney Creek, the widening and reconstruction of Grays Road from Arvin Avenue to Highway 8 was initiated.

Total Estimated Cost \$735,400
- 4) In Hamilton, the reconstruction and widening of York Street from Queen Street to Dundurn Street was completed.

Total 1977 Regional Cost \$340,000
- 5) In Hamilton, the reconstruction of Upper Wentworth Street from Concession Street to Queensdale Avenue and from Fennell Avenue to Mohawk Road was completed.

Total Estimated Cost \$324,000
- 6) Completed a road resurfacing programme, including shoulder sealing. The programme was carried out using hot laid plant mix asphalt by a contractor and using cold laid road mix by Regional Forces.

Approximately 10.5 miles accomplished for \$314,200
- 7) In Hamilton, the improvement and reconstruction of the restricted intersection at Upper Wellington Street and Fennell Avenue was completed.

Total Estimated Cost \$270,000
- 8) In Hamilton, major repairs to the Claremont Access were initiated; completion in 1978.

Total Estimated Cost \$246,000
- 9) In Flamborough, the replacement of the Grindstone Creek Bridge on Mill Street was initiated.

Total Estimated Cost \$240,000

Cont'd....

MAJOR IMPROVEMENT WORKS - Cont'd...

- 10) In Flamborough, the relocation and reconstruction of the Campbellville Road and Centre Road intersection was completed. Hazardous vertical alignment was improved.

Total Estimated Cost \$145,000

- 11) In Stoney Creek, reconstruction and improvement of Queenston Road from Highway 20 to Riverdale Avenue was initiated.

Total Estimated Cost \$115,000

- 12) In Hamilton, construction of two preliminary roads were completed; Upper Paradise Road, north and south of Stone Church Road and Stone Church Road, east and west of Upper Paradise Road.

Total Estimated Cost \$ 90,000

- 13) In Hamilton, intersection improvement at Upper James Street at Stone Church Road was completed.

Total Estimated Cost \$ 34,000

- 14) In Hamilton, median improvement on Upper James Street, south of Rymal Road was completed.

Total Estimated Cost \$ 32,500

- 15) In Dundas, the intersection improvement at Cootes Drive and East Avenue was initiated.

Total Estimated Cost \$ 31,000

- 16) In Hamilton, the intersection improvements at Rymal Road and Trinity Church Road was completed.

Total Estimated Cost \$ 31,000

- 17) In Glanbrook, the realignment and reconstruction of the hazardous intersection at Miles Road and Twenty Road was completed.

Total Estimated Cost \$ 30,000

- 18) In Glanbrook, major repairs were completed to the Glanford Station Bridge (C.N.R.) on White Church Road.

Total Estimated Cost \$ 25,000

- 19) In Flamborough, the replacement of a culvert on Millgrove Side Road was initiated.

Total Estimated Cost \$ 15,000

Cont'd.....

MAJOR IMPROVEMENT WORKS - Cont'd.....

- 20) In Hamilton, automatic crossing protection for four level railway crossings was installed on Kenilworth Avenue at Beach Road.

Total Estimated Regional Cost	\$ 8,000
-------------------------------	----------

LAND ACQUISITION

In an attempt to secure road allowance widenings prior to a road widening or reconstruction project, this Section was engaged in a number of land acquisition programmes.

- 1) In Flamborough acquisition of 164 Mill Street South was initiated. Land required for road relocation and slope stabilization.

Total Estimated Land Cost	\$300,000
---------------------------	-----------

- 2) In Hamilton, acquisition for improvement and reconstruction of restricted intersection at Main Street at Ottawa Street was initiated. Two year programme.

Total Estimated Land Cost	\$181,500
---------------------------	-----------

- 3) In Hamilton and Stoney Creek, acquisition on King Street from Nash Road to Battlefield Creek was initiated. Land required for widening and reconstruction, including intersection improvement at Highway 20.

Total Estimated Land Cost	\$140,000
---------------------------	-----------

- 4) In Hamilton, two year land acquisition programme at Mohawk Road and West 5th was initiated. Restricted Intersection requires improvements and reconstruction.

Total Estimated Land Cost.	\$120,000
----------------------------	-----------

- 5) In Hamilton, acquisition for improvement of intersection at Parkdale Avenue at Barton Street was initiated. Construction in 1978.

Total Estimated Land Cost.	\$ 72,000
----------------------------	-----------

- 6) In Hamilton, acquisition for improvement and reconstruction of restricted intersection at Mohawk Road at Upper Wellington Street was initiated. Construction in 1978.

Total Estimated Land Cost.	\$ 65,000
----------------------------	-----------

- 7) In Hamilton, acquisition for the construction of an extension from Stonechurch Road to Paramount Drive was initiated. Construction in 1978.

Total Estimated Land Cost.	\$ 55,000
----------------------------	-----------

Cont'd.....

LAND ACQUISITION - Cont'd....

- 8) In Flamborough, acquisition along Centre Road, north and south of the 8th Concession Road in order to improve a stretch of hazardous road, was completed. Construction in 1978.

Total Estimated Land Cost \$ 50,000

- 9) In Hamilton, acquisition of one property was made at Grays Road at C.N. Railway for future grade separation.

Total Estimated Land Cost \$ 46,000

- 10) In Stoney Creek, acquisition on Barton Street, Green Road to Millen Road was completed. Widening and reconstruction in 1978.

Total Estimated Land Cost \$ 40,000

- 11) In Flamborough, acquisition of one property was made on Hamilton Street near Highway #5 for future widening.

Total Estimated Land Cost \$ 33,000

FUNCTIONAL DESIGN STUDIES

Several Engineering studies were undertaken in order to prepare for 1978/1979 Current and Capital Budgets and to react to future budget requirements.

- 1) In Hamilton, preliminary study for widening and reconstruction of Burlington Street from Strathearne Avenue to Q.E.W. was carried out by a consultant. Intersection improvements were also investigated.

Estimated Study Cost \$ 50,000

- 2) In Hamilton, Industrial Perimeter Road Study was continued. Possible location was investigated.

Estimated Study Cost \$ 85,000

- 3) In Hamilton, preliminary study for necessity of grade separation of the C.N. Railway on Grays Road.

Estimated Study Cost \$ 20,000

Cont'd.....

FUNCTIONAL DESIGN STUDIES - Cont'd....

- 4) In the City of Hamilton at Mohawk Road and West 5th. The identification of land requirement for improvement of the intersection which is planned in 1979. Land acquisition to be completed in 1978.
- 5) In the City of Hamilton at Mohawk Road and Upper Wellington St. The identification of land requirement for planned construction in 1978.
- 6) In Ancaster, vertical alignment improvement on Fiddler's Green Road immediately north of Carluke Road.
- 7) In Ancaster, intersection improvement on Fiddler's Green Road at Book Road.
- 8) In Ancaster, slope stabilization on Jerseyville Road. Construction planned in 1979.
- 9) In Ancaster, intersection improvement at Carluke Road and Shavers Road. Construction planned in 1978.
- 10) In Ancaster, intersection realignment at the intersection of Carluke Road and Sawmill Road. Construction planned for 1979.
- 11) In Flamborough final functional planning for the realignment of Brock Road from Harvest Road to North of Hwy. #5. Continuation of land acquisition in 1978-1979 at an estimated total cost of \$260,000. Planned construction 1980.
- 12) In Flamborough on Centre Road at Concession XI Road. A horizontal and vertical curve realignment.

Cont'd....

FUNCTIONAL DESIGN STUDIES - Cont'd....

- 13) In Glanbrook - Identification of land requirement to improve a hazardous curve at Woodburn Road and Guyatt Road. Construction planned in 1978 at an estimated cost of \$25,000.
- 14) In Stoney Creek and in the City of Hamilton an extension of Stone Church Road to connect with Paramount Road at Mount Albion Road. Construction is planned in 1978 at an estimated net cost of \$220,000.
- 15) In Stoney Creek the widening and reconstruction of Barton Street between Green Road and Millen Road for the identification of land requirement. Construction is planned in 1978 at an estimated cost of \$800,000.
- 16) In Stoney Creek final plans for land requirement for the reconstruction and widening of King Street from Stoney Brook Drive to Hwy. #8.

Land Cost Estimate 1978

\$107,000

MAJOR STUDIES UNDERTAKEN OR PARTICIPATED IN

- 1) Enabling Legislation for the Establishment of a Regional Road System.
- 2) 1977 Road Needs Update for the Ministry of Transportation and Communications.
- 3) Mountain East-West/North-South Freeway Study initiated with request to various consultants for submission of proposals.
- 4) Q.E.W. highway improvement study to determine interim solution to capacity deficiencies across the Skyway Beach Strip
- 5) Traffic Studies were undertaken at the following locations:

Jerseyville Road - Wilson Street to Hwy. 52
Mohawk Road and McNiven Road Intersection
Old Ancaster/Dundas Road
- 6) Metric Conversion of Speed Limits on all Regional Roads.
- 7) Annual Traffic Counting Programme for Regional Road System.

MAJOR MAINTENANCE OPERATIONS

A. GENERAL MAINTENANCE

1. Surface Maintenance	-	700,000
2. Shoulder Maintenance	-	60,000
3. Roadside Maintenance	-	435,000
4. Drainage Maintenance	-	320,000
5. Safety Devices	-	1,236,000
6. Winter Maintenance	-	1,390,000
7. Special Projects	-	120,000

B. MAJOR ACTIVITIES

1. Metric conversion of traffic regulating signs.

Total Gross Estimated Cost - \$22,000.

2. Binbrook Road at Lincoln Line - realignment and reconstruction of Binbrook Road. Project in conjunction with Regional Municipality of Niagara.

Total Gross Estimated Cost - \$19,000.

3. Tapleystown Maintenance Building - Salt Dome - This is the third of eight planned salt and sand storage domes.

Total Gross Estimated Cost - \$40,000.

4. Bridge and Culvert Improvements - repairs and improvements to 5 bridges and 16 culverts as part of structure maintenance programme.

Total Gross Estimated Cost - \$37,000.

MAJOR MAINTENANCE OPERATIONS.....Cont'd.....

B. MAJOR ACTIVITIES (Cont'd)

5. Surface Treatment of Roadways - mi.

Total Gross Estimated Cost - \$77,000.

6. In Stoney Creek - Reg. Rd. No. 11 (Mud Street)-
grade improvement at Isaac Brock Drive.

Total Gross Estimated Cost - \$14,000.

7. In Stoney Creek - Reg. Rd. No. 25 (Ridge Road)-
completion of guide rail installation, the result
of coroner's inquest in a fatal accident.

Total Gross Estimated Cost - \$11,000.

8. In Stoney Creek - Reg. Rd. No. 34 (Tapleytown Rd.)-
vertical realignment of road surface.

Total Gross Estimated Cost - \$22,000.

9. In Glanbrook - Reg. Rd. No. 26 (Miles Road)-
realignment of intersection at Miles & Twenty Roads.

Total Gross Estimated Cost - \$20,000.

10. Vehicle & Equipment Replacement.

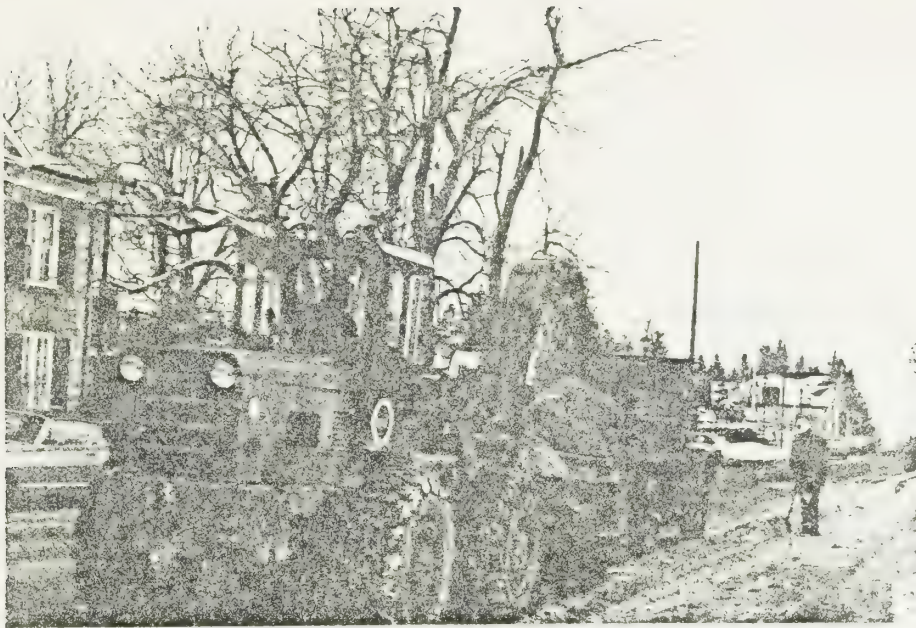
2 - 1/2 Ton Pick-ups, 2 - 1/2 Ton Vans, 1 Compact car,
1 - 10 Ton Roller, and 5 pieces of miscellaneous
equipment were purchased.

Total Gross Estimated Cost - \$75,300.

11. Completion of Central Garage - purchase of tools
and equipment.

Total Gross Estimated Cost - \$15,000.

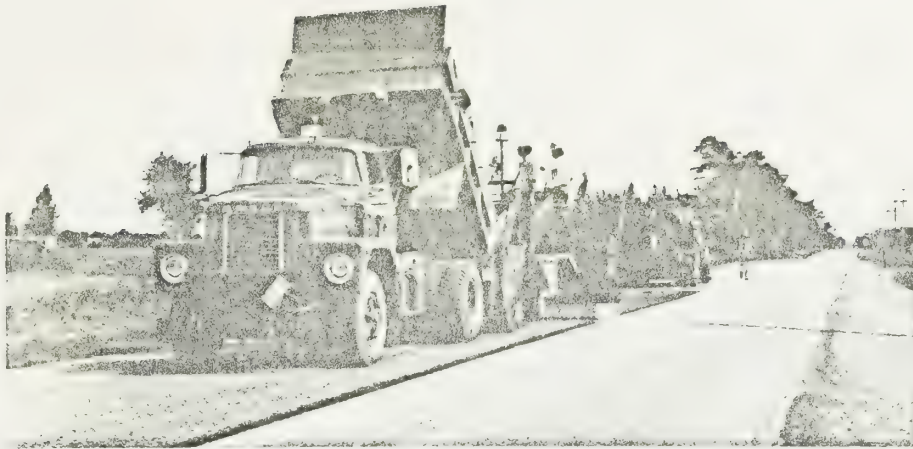
A series of photographs are included herein, depicting the range
of Regional forces at work with various pieces of equipment.



SNOW REMOVAL FROM AN URBAN STREET



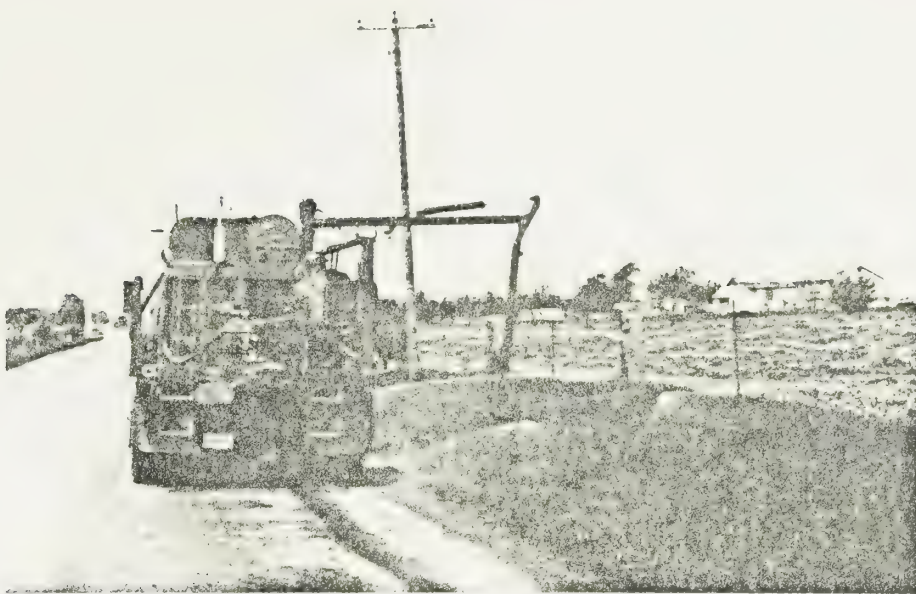
SURFACE DRAGGING



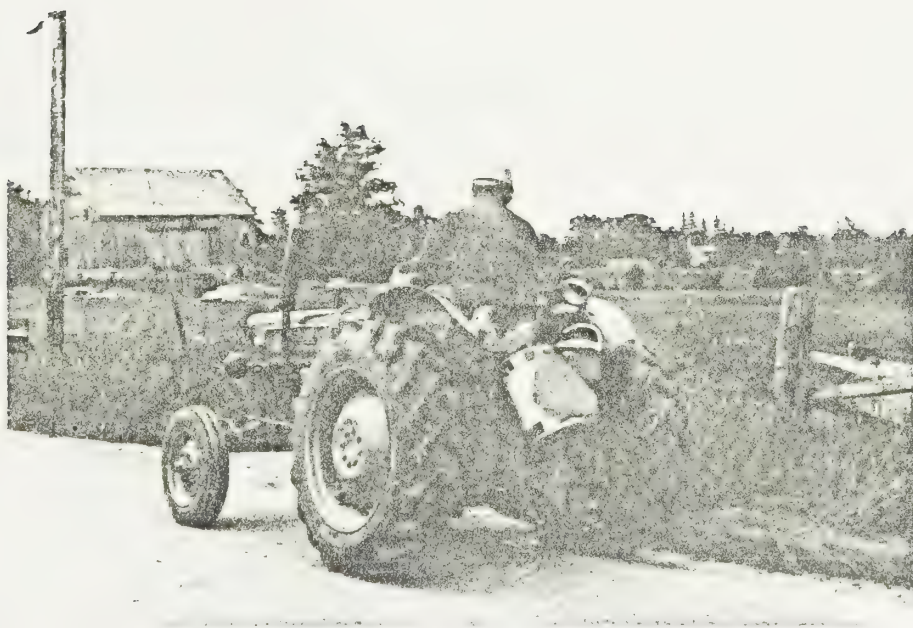
SURFACE TREATMENT WITH ASPHALT
EMULSION AND 3/8" CHIPPINGS



DITCHING AND INSTALLATION
OF NEW ENTRANCE CULVERT



CHEMICAL WEED CONTROL



ROADSIDE MOWING

REGIONAL LABORATORIES

V. FORDE, DIRECTOR

The Regional Laboratories is staffed by sixteen people, most of whom have chemical laboratory skills. About half of the staff are employed on shifts to man operations which must be continuous.

The functions of the laboratory are - water purification control, sewage treatment control, materials of construction testing, purchasing testing, surveys for environmental control agencies, noise pollution control, assistance to Fire and Police Departments regarding hazardous chemicals and miscellaneous analyses.

It has been found to be most economical to have these related functions under one technical administration as overhead and technical supervision can be kept to a minimum. Each Area Municipality and government agency can employ the services of the laboratory on a fee for service basis. The City of Hamilton and the Conservation Authority as well as some industries now use the service.

WATER PURIFICATION CONTROL

The principal work carried out by this section of the laboratory is the bacteriological testing of raw and finished tap water. The purification of the water is continuously monitored throughout the plant to insure proper bacteriological and chemical control.

Four technicians are employed on a two-shift basis, 7 days per week analyzing raw water, partially treated water, finished water and the distribution system.

About 400 samples per month are collected by laboratory staff at various points on the distribution system. The number of samples which must be collected have been determined by the Ministry of Health and is related to the population on the distribution system. These samples are tested for chlorine concentration, and two bacteriological tests, namely P.A. and total coliform.

During 1977 we began a program of evaluating the total plate count (a type of bacteria) against the chlorine residual at varying distances from the distribution plant. It is expected that a preliminary report will be available early in 1978 making this data known. It is hoped that the information will be useful in establishing chlorine booster stations.

SEWAGE TREATMENT CONTROL

This section of the laboratory is staffed with four technicians manning two shifts, seven days per week. The purpose of this laboratory is to evaluate the treatment process at the various stages and to ensure that the final sewage effluent meets certain criteria.

Cont'd.....

SEWAGE TREATMENT CONTROL - Cont'd....

A wide variety of analyses are required to properly control the treatment of sewage; some of the more important parameters are - B.O.D., C.O.D., total solids, suspended solids, settleability, dissolved oxygen, etc.

Although this work is largely routine, certain within plant studies requiring special analytical techniques are employed from time to time by this group.

INDUSTRIAL WASTE

The industrial complexity of the City of Hamilton and surrounding area necessitates the control of industrial wastes discharged into the sewage system.

This type of analytical procedure although somewhat routine requires chemical techniques which deviate slightly from the normal routine sewage treatment control. One technician is employed to perform specific analyses on routinely collected samples from industrial discharges into the sewage system.

These samples are evaluated for their potential effect upon the sewage treatment facility.

Many special sampling and analytical programs are instituted from time to time in order to determine the source of a detrimental industrial waste.

PURCHASING TESTING

The laboratory is very well equipped for testing and evaluating most of the materials which are purchased by the municipalities. In the past these facilities have been heavily used but in recent years purchasing testing has declined.

Steps have been taken to revive this important function because of the substantial savings which can be realized by the determination of product quality.

Some of the things which have been done in the past are as follows:

1. Evaluation of wearing qualities of clothing for workers, Fire and Police Departments.
2. Paint testing.
3. Paper, garbage bags, ballpoint pens and dry cell battery evaluation.

Cont'd.....

PURCHASING TESTING - Cont'd...

Certain negotiations are underway for co-operative purchasing with each area municipality, hospitals and other municipal agencies. Part of this program will involve quality evaluation by the Regional Laboratories.

Decision to purchase a certain commodity cannot be made upon price alone. The quality of the material plays an equally important role and in this regard the laboratory can provide this information. Experience has shown that the cost of determining the quality is a very small fraction of the savings generated.

MATERIALS TESTING LABORATORY

An Engineering technician is responsible for testing of materials used in the construction of roads, sidewalks, bridges and certain other structures. The two principal users of this service are the Regional Government and the City of Hamilton.

The bulk of the testing is done on concrete and asphalt samples. A breakdown of the various tests is given below.

CONCRETE

Concrete cylinders for Regional Government.....	553
Concrete cylinders for City of Hamilton.....	569
	<u>Total: 1,122</u>
Concrete beams	3

ASPHALT

Asphalt content	124
Asphalt sieve analyses	124
Marshall Tests	319
Proctor Tests	6
Aggregate sieve analyses	31
Percent clay lumps	10
Specific gravity	5
Organic Impurities in sand	6
Moisture absorption of aggregate	5
Finess modulus for aggregate	5
Compression strength on mortar	3

In recent years the number of determinations on materials used in construction has decreased somewhat. It is anticipated that during the 1978 construction period we will make the other area municipalities aware that the facility is available for their use.

Cont'd.....

PRIVATE INDUSTRY & GOVERNMENT AGENCIES

PRIVATE INDUSTRY

Analytical work from the private section is accepted on a fee basis if it is considered that this laboratory has certain expertise not available elsewhere. In general the type of work accepted from industry is for water analysis and is valued at about \$100 - \$200 per sample.

McMASTER UNIVERSITY MEDICAL CENTRE

The Laboratory has contracted to count microscopically pollen grains and fungal spores for a fee of \$6,000. This money was received as part of a grant to evaluate the concentration of pollen, etc., against patient response to treatment for ragweed pollen.

HAMILTON REGION CONSERVATION AUTHORITY

A regular annual sanitary survey is carried out on the streams within the jurisdiction of the Conservation Authority. This work is revenue producing and this year has generated about \$5,500.

In addition to all of the previously well defined roles, numerous evaluations of statistical data generated for the sewage treatment plant, industrial waste and water works are made on a continuing basis. This results in considerable consultations with the Laboratory staff by many different departments within the Regional Government and the area municipalities.

MISCELLANEOUS ANALYSES

The following table indicates the varied nature of non-routine special analyses done for various departments with the local government.

<u>No. of Samples</u>	<u>Nature of Service</u>
536	2000 analyses for industrial waste.
8,000	Analyses for bacteria and chlorine on water works distribution system.
61	Water identification and consumer complaints.
8	Industrial waste for landfill sites.
22	Ancaster Water Works - other than bacteria.
30	Cold Spring Creek analyses.
13	Industry - water analyses.
30	Private Citizens - fluoride, bacteria & chlorine analyses.
3	Regional Police
5	Contractors - Water Identification
10	Fire Department

ENGINEERING SERVICES SECTION G. J. STONE, DIRECTOR

This section has a staff of 42 employees and is responsible for the design and construction of new roads, water distribution, sewage collection and sewerage and water treatment facilities.

The construction of new buildings or major maintenance and renovations to existing Regional buildings ie: Macassa Lodge, Wentworth Lodge, and the Police Administration Building are also supervised by this section.

Contracts awarded in 1977 totalled approx. \$17,000,000.00 with some of the major works listed on the attached sheet.

This section also approved the design and supervised the construction of sewers and watermains in approximately 21 subdivisions throughout the Region at a construction value of approx. \$7,000,000.00.

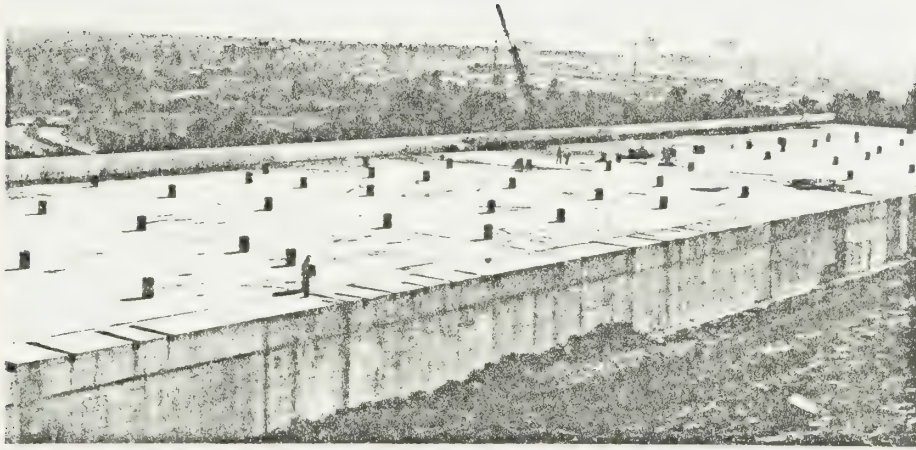
<u>DESCRIPTION</u>	<u>COMPANY</u>	<u>PRICE</u>
<u>ANCASTER</u>		
Ancaster Landfill Site Extension	Dufferin Construction Co.	\$125,000.00
<u>DUNDAS</u>		
Expansion to the King Street Sewage Treatment Plant	J. K. Mason Ltd.	\$3,000,000.00
Eastern Trunk Sanitary Sewer and Watermain on Olympic Drive	Wm. Groves Limited	\$833,800.00
Western Trunk Sanitary Sewer - Phase II	Keeway Construction Co. Ltd.	\$660,000.00
<u>FLAMBOROUGH</u>		
Re-alignment of Campbellville Road at Centre Rd.	Wm. Groves Limited	\$145,000.00
Bridge over Grindstone Creek on Mill Street	A. Cope and Sons Limited	\$308,000.00
Expansion to the Main Street Sewage Treatment Plant	Collavino Bros. Inc.	\$1,500,000.00
Waterdown - Standpipe	Dufferin Construction Co.	\$1,100,000.00
<u>GLANBROOK</u>		
Watermain installation on:		
Milec Road from Twenty Road to Hamilton City Limits	Delmar Contracting Ltd.	\$152,000.00
Miles Road from Twenty Road to Dickenson Road		

Cont'd.....

<u>DESCRIPTION</u>	<u>COMPANY</u>	<u>PRICE</u>
<u>HAMILTON</u>		
<u>Expansion to the Woodward Avenue Sewage Treatment Plant</u>	George Wimpey Canada Ltd.	\$7,200,000.00
<u>Sewer and Watermain installation on:</u>		
<u>SEWER - Upper Paradise Road and Stone Church Road North and South, East and West of intersection</u>		
<u>WATERMAIN - Stone Church Road from Upper Paradise Road to approx. 1,040' westerly</u>	Boschman Contracting Ltd.	\$281,000.00
<u>Reconstruction of Gray's Road from Highway #8 to Milburn Road</u>	Dufferin Construction Co.	\$800,000.00
<u>Traffic Improvements on King Street West from Bay Street to Dundurn Street</u>	Standard Paving Company	\$1,300,000.00
<u>South/West Central Trunk Storm Sewer</u>	S. McNally and Sons Ltd.	\$1,100,000.00
<u>Intersection Improvements at Upper Wellington Street and Fennell Avenue</u>	Dufferin Construction Company	\$200,000.00
<u>Reconstruction Upper Wentworth Street - Mohawk Road to Fennell Avenue and from Concession Street to Queensdale Avenue</u>	Dufferin Construction Company	\$350,000.00
<u>Repairs to T.H. & B. Railway overpass on the Claremont Hill Mountain Access Road</u>	Dufferin Construction	\$227,000.00

Cont'd.....

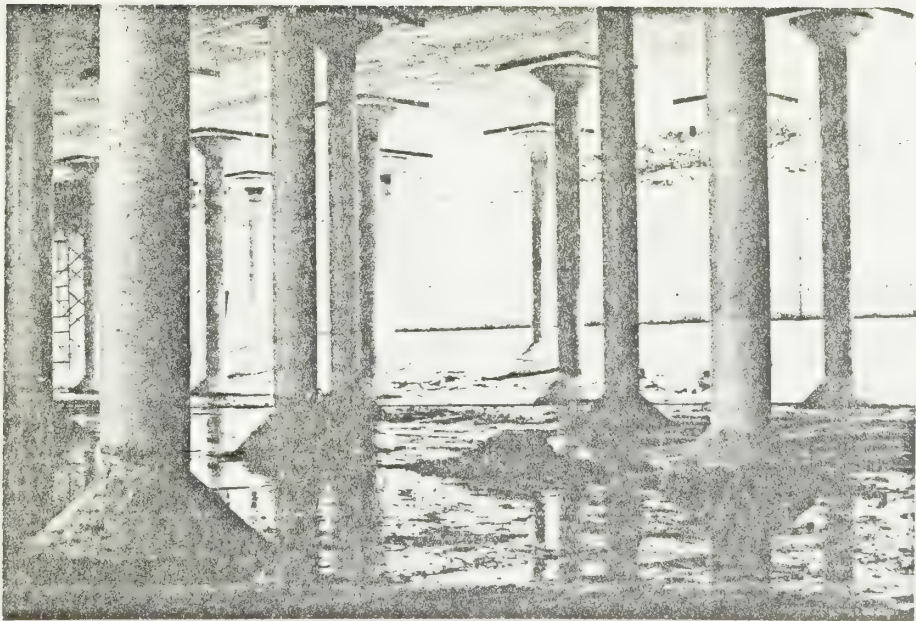
<u>DESCRIPTION</u>	<u>COMPANY</u>	<u>PRICE</u>
<u>STONEY CREEK</u>		
<u>Sewers on Barton Street east and west of Dewitt Road and Highway 8 east and west of Dewitt Road.</u>	Bono General Const.	\$315,000.00
<u>H8A Pumping Station on Dewitt Road</u>	Robertson-Yates Corporation	\$560,000.00
<u>Watermain construction on:</u>		
Mud Street from First Road West to approx. 500' east of Highway #20		
First Road West from 990' north of John Murray to Mud Street		
First Road East from Mud Street to 2,700' northerly	A. Cope & Sons Ltd.	\$185,000.00
Second Road West from Highway #53 to Highland Road	Delmar Contracting Ltd.	\$ 80,000.00
Reconstruction of the Vinemount Bridge	King Paving	\$860,000.00



RESERVOIR W-H2A-15,000,000 GALLONS

MAY - 1977

CONTRACT RHW-75-26





AUGUST 2, 1977

TRAFFIC IMPROVEMENTS ON KING STREET WEST FROM
BAY STREET TO DUNDURN STREET
CONTRACT RHW-77-32(SH)



NOVEMBER 1, 1977

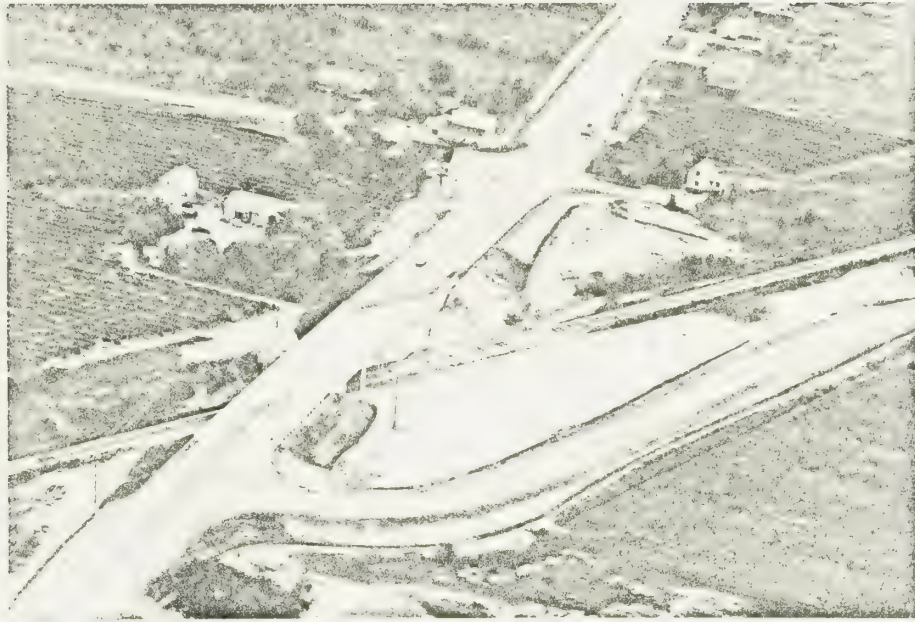


SEWER INSTALLATION ON KING STREET WEST
FROM BAY STREET TO DUNDURN STREET

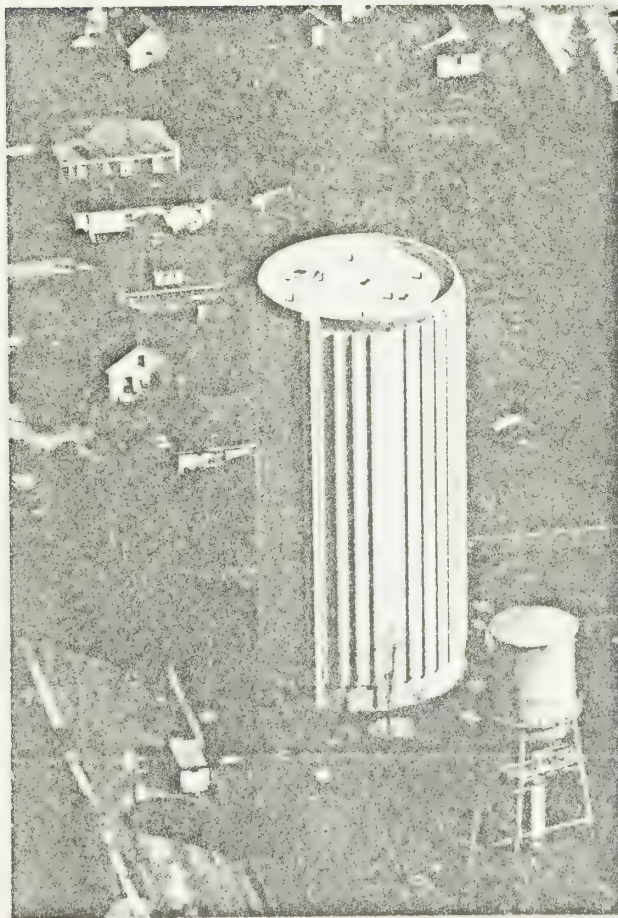
AUGUST - 1977

CONTRACT RHW-77-32(SH)





RECONSTRUCTION OF THE VINEMOUNT BRIDGE
CONTRACT RHW-76-52



WATERDOWN - STANDPIPE
CONTRACT RHW-76-36

SURVEYING SECTIONM.A. CHIDLEY, DIRECTOR

This section has a staff of 16 employees and its function is generally as follows:

1. Surveys - Legal
 - Engineering
 - Photogrammetric
 - Vertical Control
 - Horizontal Control
2. Integrated Mapping
3. Computer Inventories and Files
4. Property Management
 - Land acquisition - estimates - negotiations, etc.
 - Taxable properties
 - Buildings
 - Property Use
 - Land Resources Committee

SURVEYS AND MAPPING

This Section provides the legal and engineering Surveys which are required for land transactions and for the construction of engineering works. Certain few surveys, which for reasons of time, manpower required, or being of a specialized nature, are contracted to private firms.

In order to provide this Survey service, while keeping staff and costs at a minimum and results at a maximum, modern methods and equipment are employed.

We now have the resources to utilize the potential of photogrammetric mapping as a valuable tool as a result of negotiations and efforts by this Section with the Federal Department of Energy, Mines and Resources and with the provincial Ministry of Natural Resources. In 1974, 1975, 1976, and 1977, these levels of government have provided a dense network of horizontal (positional) control and vertical control (Bench Marks) throughout the entire Region.

Approximately 500 Bench Marks have been established in the five Area Municipalities outside the City of Hamilton, at an estimated total cost of \$100,000, the Region's share being \$35,000.; approximately 135 horizontal control monuments have been established in the same area at a total estimated cost of \$45,000. with the Region's share being \$30,000.; and in the summer of 1977 we assisted the Government of Canada and the Province of Ontario in a co-operative effort to establish 14 prime or first order control monuments at an estimated cost to the Government of Canada of \$160,000., the Province of Ontario of \$15,000., and a cost to the Region of about \$5,000. In addition, the Region established 12 additional monuments in Flam-borough at a cost of \$6,300.

We have also secured up-to-date aerial photography covering the City of Hamilton and a surrounding 60,000 acres of the Region at a total cost of \$16,500. This control and photography is a prerequisite to viable photogrammetric mapping.

Engineering Surveys have been made in connection with a variety of projects including the following major works:(approximate cost of survey).

1. Central, Kemp, Creighton & Begue in the Town of Dundas (\$8,500.)
2. Hamilton Street, Mill Street and Kelly Street in Waterdown (\$6,000.)
3. Ancaster Landfill Site (\$4,000.)
4. King Street, Bay to Dundurn in the City of Hamilton (\$12,100.)
5. Upper Wellington St., Upper Wentworth St., Fennell Ave. in the City of Hamilton (11,000.)
6. Brock Road Re-Alignment in the Township of Flamborough (\$6,000.)
7. Highway #5 Watermain Installation in the Township of Flamborough (\$2,000.)

Legal Surveys have been made for minor and varied purposes and those of a day to day routine nature and for many major projects including the following: (approximate cost of survey)

1. Western Trunk Sewer, Stage 2 - Town of Dundas (\$5,200.)
2. Barton Street Widening and Watermain Installations - Town of Stoney Creek (\$900.)
3. DeWitt Road Pumping Station - Town of Stoney Creek (\$500.)
4. Sewage Treatment Plant Expansion - Town of Dundas (\$1,500.)
5. Grays Road Widening - City of Hamilton and Town of Stoney Creek (\$3,000.)
6. Sewer Installation - Hamilton Street, Waterdown (\$4,000.)
 - Kemp Street, Dundas (\$1,500.)
 - Kelly Street - Mill Street, Waterdown (\$800.)
7. Stone Church Industrial Park Subdivision - City of Hamilton (\$8,400.)
8. Watermain Easement - Chedoke Golf Course - Hamilton (\$3,700.)
9. Glanbrook Landfill Site (\$2,200.)

Integrated Mapping

A mapping Co-ordinating Committee has been formed to inventory and co-relate the mapping requirements of Regional Departments, Area Municipalities, and other interested user agencies throughout the Region.

Computer Files and Inventories

The following computer files and inventories are maintained by the Survey Section.

1. Property Inventory
2. Taxable Properties Inventory
3. Buildings Inventory
4. Insured Value Inventory
5. Plan Index

Property Management

The Survey Section is involved in several areas of property management.

1. Land Acquisition
 - (a) Securing of estimates
 - (b) Required surveys
 - (c) Related Registry office searches
 - (d) Expediting and monitoring purchases
 - (e) Budget control
 - (f) Reporting
 - (g) Expropriations
 - (h) Registration of documents
 - (i) Update computer property inventory

In 1977 approximately 66 properties for 15 projects were acquired, at an approximate cost of \$4,779,000.

e.g. Future Stoney Creek Water Treatment Facility - \$398,999.
 Expansion to Dundas S.T.P. - \$3,000,000.
 Widening of King St. - Bay to Dundurn Hamilton - \$150,000.

2. Taxable Property Inventory

The development of the taxable property inventory together with associated assessment roll numbers, assessed values, taxation status etc. has produced information which is being used by this Department and the Finance Department in an attempt to budget for taxes payable to each area municipality with proper accounting therefore.

3. Building Inventory

The development of a computerized building inventory has produced many, as yet, unanswered questions concerning building responsibility, maintenance, etc., and is being used as a basis to determine adequate and realistic insurance coverage.

4. Property Use Inventory

A property use inventory is being developed, to show:

- (a) Responsibility and jurisdiction
- (b) Maintenance of Property
- (c) Maintenance of Buildings
- (d) Present use of property
- (e) Potential Use
 - (i) By responsible department
 - (ii) By other department
 - (iii) By other municipalities or agencies
- (f) Interim use
 - (i) By responsible department
 - (ii) By other department
 - (iii) By other municipalities or agencies
 - (iv) Interim income potential (rental or lease)
- (g) Disposition of surplus lands

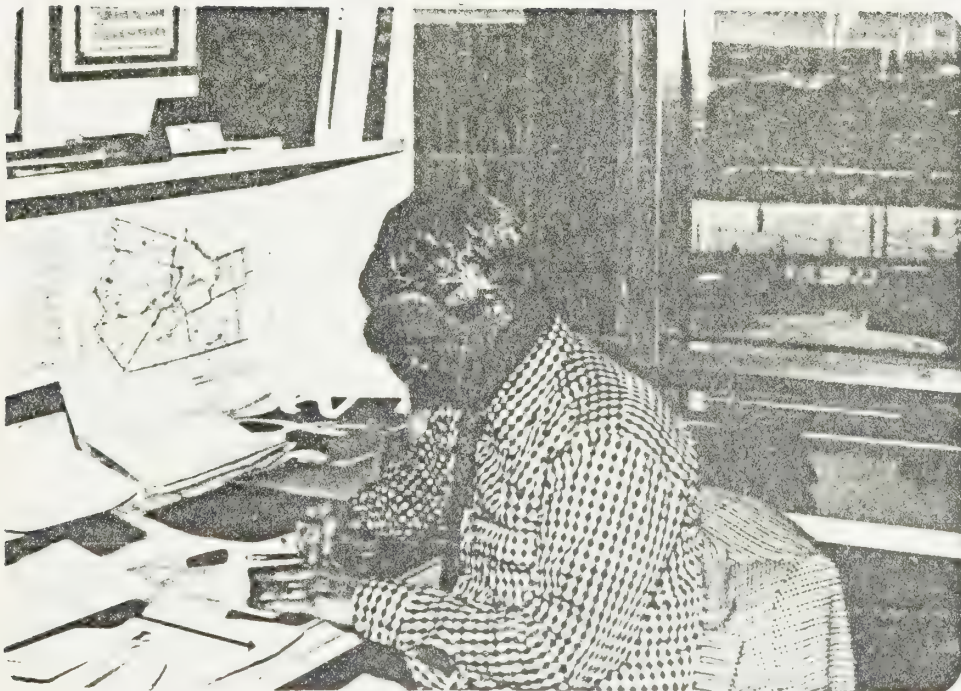
5. Land Resources Committee

This is a staff Committee chaired by the Regional Surveyor to discuss problems of land management and to consider and recommend procedures. The Committee has recommended and implemented the following:

- (a) Procedures to process enquiries concerning lands offered to the Region
- (b) Procedures to process Regionally initiated land acquisitions
- (c) Guidelines for the sale of Industrial lands
- (d) Policy regarding compensation to be paid in Land Transactions between the Region and Area Municipalities.



OFFICE WORK



CHECKING CALCULATIONS



CONTROL SURVEY CREW IN ACTION



GIVING LINE

ADMINISTRATIVE SECTIONL. FRANCO, DIRECTOR

This Section has a staff of 14 employees and is responsible for:

Provision of typing service

Accounting

Incoming and Outgoing Mail

Central Filing System

Issuance of Various Permits

PERMITS ISSUED AND CASH RECEIVED

Water Service Permits (1,737)	\$ 60,840.00
Private Drain Permits (2,303)	48,063.00
Miscellaneous Account (New Service Charges, Relocate Hydrants, Sale of Water Hydrants, Special Sewer or Water Agreements)	164,840.00
(Including Specifications, Maps, Manuals, Printing Matter, Building Line, Culverts, Scrap Metal)	<u>34,200.00</u>
TOTAL	<u>\$307,943.00</u>
Coins taken in through Coin Meter Stations	\$ 6,707.00

HAMILTON PUBLIC LIBRARY



3 2022 21333540 5

